4

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/979,524	11/23/2001	Hiroshi Takahashi	2224-0193P	6338

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EXAMINER
STEVENSON, ANDRE C

ART UNIT	PAPER NUMBER
2812	

DATE MAILED: 05/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/979,524	TAKAHASHI ET AL.	
	Examiner	Art Unit	
	Andre' C. Stevenson	2812	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☐ Claim(s) _____ is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-18 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a)☐ All b)☐ Some * c)☐ None of the CERTIFIED copies of the priority documents have been:

1.☐ received.

2.☐ received in Application No. (Series Code / Serial Number) _____ .

3.☐ received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. & 119(e).

Attachment(s)

15) ☒ Notice of References Cited (PTO-892)
16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
18) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
19) ☐ Notice of Informal Patent Application (PTO-152)
20) ☐ Other: .

Detail Action

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1 through 18 are rejected under 35 U.S.C. 103(a) as being unpatentable Yamazaki et al (U.S. Pat. No.6266113 B1) over, and further in view of Nakao et al (U.S. Pat. No.6452650 B1).

Yamazaki et al (U.S. Pat. No.6266113 B1), for **Claim #1,** a transmittable light-scattering sheet which comprises a light-scattering layer **(Column 8, lines 35 through 44)** composed of a plurality of polymers varying in refractive index **(Column 3, lines 7 through 40)** and having at least a droplet phase structure.

Yamazaki et al (U.S. Pat. No.6266113 B1) discloses the claimed invention except for the composition of a plurality of polymers varying in refractive index and having at least a droplet phase structure. Nakao et al (U.S. Pat. No.6452650 B1) teaches that it is known to have a composition of a plurality of polymers varying in refractive index and having at least a droplet phase structure.

With respect to **Claim #1**, composition of a plurality of polymers varying in refractive index and having at least a droplet phase structure, is taught by Nakao et al (U.S. Pat. No.6452650 B1) (column 48, lines 39 through 53).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to composition of a plurality of polymers varying in refractive index and having at least a droplet phase structure as taught by Nakao et al (U.S. Pat. No.6452650 B1), since Nakao et al (U.S. Pat. No.6452650 B1) column 48, lines 39 through 53 that such a modifications would allow the liquid crystals in each layer can be aligned in parallel with the substrates and also the orientations of the liquid crystals.

With respect to **Claim #2**, transmittable light-scattering sheet according to Claim 1, wherein an incident light is diffused isotropically, and a maximum value of scattered light intensity appears at a scattering angle of 3 to 40°, is taught by Yamazaki et al (U.S. Pat. No.6266113 B1) (Fig. 18-20, 24 & 23column 15, lines 55 through 61, column 18, lines 4 through 6).

Furthermore, **Claim #3**, a transmittable light-scattering sheet according to Claim 1, wherein an average diameter of droplets in the droplet phase structure is 0.1 to 20 μm, is taught by Nakao et al (U.S. Pat. No.6452650 B1) (column 16, line 65 through 67, column 17, line 1 through 13, column 19, line 37 through 54, column 36, line 1 through 5, column 37, line 21 through 26, column 38, line 23 through 27, line 61 through 65).

With respect to **Claim #4,** a transmittable light-scattering sheet according to Claim 1, wherein an average distance between droplet centers is 0.5 to 15 μm and a standard deviation of the average distance is 40 % or less of the average distance in the droplet phase structure, is taught by Nakao et al (U.S. Pat. No.6452650 B1) (column 16, line 65 through 67, column 17, line 1 through 13, column 19, line 37 through 54, column 36, line 1 through 5, column 37, line 21 through 26, column 38, line 23 through 27, line 61 through 65).

Considering now **Claim #5**, a transmittable light-scattering sheet according to Claim 1, wherein the proportion of droplets in the droplet phase structure is 30 to 70 volume % based on the whole light-scattering layer, is taught by Nakao et al (U.S. Pat. No.6452650 B1) (column 16, line 65 through 67, column 17, line 1 through 13, column 19, line 37 through 54, column 36, line 1 through 5, column 37, line 21 through 26, column 38, line 23 through 27, line 61 through 65).

Furthermore, **Claim #6**, a transmittable light-scattering sheet according to Claim 1 which comprises a light-scattering layer 25 scattering an incident light isotropically, wherein the light-scattering layer expresses maximum values of a scattered light intensity at two scattering angles, is taught by Nakao et al (U.S. Pat. No.6452650 B1) (column 29, line 30 through 45).

With respect to **Claim # 7,** a transmittable light-scattering sheet according to Claim 6, wherein a smaller angle 8a of the maximum value is 2 to 20° in the scattered light intensity, is taught by Nakao et al (U.S. Pat. No.6452650 B1) (column 29, lines 46 through 58).

Considering now **Claim #8**, a transmittable light-scattering sheet according to Claim 6, the ratio of a smaller angle θa to a larger angle θb of maximum. values is 6b/6a = 1.5 to 10, is taught by Nakao et al (U.S. Pat. No.6452650 B1) (Fig. 22a & b, column 29, line 46 through 58).

Furthermore, **Claim #9**, a transmittable light-scattering sheet according to Claim 6, wherein the light-scattering layer has at least a droplet or an island-in an ocean phase structure, and a distribution of particle size of dispersed phase in the phase structure has two peaks at different average particle sizes, is taught by Nakao et al (U.S. Pat. No.6452650 B1) (Fig. 21 a & b and 22 a & b, column 9, line 1 through 23, column 11, line 16 through 26).

With respect to **Claim #10,** a transmittable light-scattering sheet according to Claim 1, wherein a total light transmittance is 70 to 100, is taught by Nakao et al (U.S. Pat. No.6452650 B1) (column 22, line 27 through 43).

Considering now **Claim #11**, a transmittable light-scattering sheet according to Claim 1, wherein a difference between refractive indexes of a plurality of polymers is 0.01 to 0.2, is taught by Nakao et al (U.S. Pat. No.6452650 B1) (column 31, line 24 through 32).

Furthermore, **Claim #12**, a transmittable light-scattering sheet according to Claim 1, wherein a plurality of polymers comprises a first polymer and a second polymer selected from a styrenic resin, a (meth)acrylic resin, a vinyl ester-series resins, a vinyl ether-series resin, a halogen-containing resin, an alicyclic olefinic resin, a polycarbonate-series resin, a polyester-series resin, a polyamide-series resin, a silicone-series resin, a cellulose derivative and a rubber or an elastomer, and the ratio of the first polymer to the second polymer is the former/the latter = 10/90 to 90/10 (weight ratio), is taught by Nakao et al (U.S. Pat. No.6452650 B1) (column 6, line 1 through 12, column 50, line 65 through 67, column 51, line 1 through 13).

With respect to **Claim # 13,** a transmittable light-scattering sheet according to Claim 1 , wherein at least one polymer comprises s a cellulose ester, is taught by Nakao et al (U.S. Pat. No.6452650 B1) (column 2, lines 6 through 16, column 23, lines 4 through 17).

Considering now **Claim #14**, a transmittable light-scattering sheet according to Claim 1 , wherein at least one polymer comprises a cellulose acetate, is taught by

Nakao et al (U.S. Pat. No.6452650 B1) (column 2, lines 6 through 16, column 23, lines 4 through 17).

Considering now **Claim #15**, a transmittable light-scattering sheet according to Claim 1 , which has a phase separation structure composed of a plurality of polymers varying in refractive index, wherein the phase separation structure is formed by spinodal decomposition from a liquid phase comprising a plurality of polymers, is taught by Nakao et al (U.S. Pat. No.6452650 B1) (column 2, line 19 through 33).

Furthermore, **Claim #16**, a transmittable light-scattering sheet according to Claim 1, which comprises a transparent support and the light-scattering layer laminated on at least one side of the transparent support, is taught by Nakao et al (U.S. Pat. No.6452650 B1) (Fig. 35a, column 48, line 59 through 67, column 49, line 1 through 3, line 13 through 27).

With respect to **Claim # 17,** a transmittable light-scattering sheet according to Claim 16, wherein the transparent support is optically isotropic, is taught by Nakao et al (U.S. Pat. No.6452650 B1) (column 26, lines 64 through 67, column 27, lines 1 through 13, column 29, lines 30 through 45).

Considering now **Claim #18**, a transmittable light-scattering sheet according to Claim 16, wherein the transparent support comprises cellulose acetate film, is taught by

Nakao et al (U.S. Pat. No.6452650 B1) (column 1, lines 43 through 67, column 2, lines 16 through 18).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andre' Stevenson whose telephone number is (703) 308 6227. The examiner can normally be reached on Monday through Friday from 7:30 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Niebling, can be reached on (703) 308 3325. The fax phone number for the organization where this application or proceeding is assigned is (703) 308 7724.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308 0956. Also, the proceeding numbers can be used to fax information through the Right Fax system;

- TC2800 Official Before-Final RightFAX - **(703) 746-8802**
- TC2800 Official After-Final RightFAX - (703) 872-9319
- TC2800 Customer Service RightFAX - (703) 872-9317

Andre' Stevenson

Art Unit 2812

04/30/03

John F. Niebling
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